

**REMARKS**

Claims 2 and 3 are cancelled without prejudice or disclaimer. Claims 1 and 4-8 are the pending claims, with claims 1, 5 and 6 being written in independent form.

**Information Disclosure Statement**

Applicants appreciate the Examiner's consideration of the IDS filed January 20, 2006.

**Foreign Priority**

Foreign priority has been acknowledged and the priority documents received.

**Drawings**

Applicants appreciate the Examiner's note that the drawings filed on January 20, 2006 have been accepted.

**Claim Rejections – 35 U.S.C. § 101**

Claim 6 is rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Claim 6 defines a "digital storing medium including a program" embodying functional descriptive material. However, the Examiner indicates that the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason. Claim 6 has been amended to comply with the Examiner's request and now recites "a computer readable medium." Applicants request that the rejection be withdrawn.

**Claim Rejections – 35 U.S.C. § 103**

Claims 1-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Xu (Gradient Vector Flow: A new External Force for Snakes) in view of Oguz (US 2003/0142750)<sup>1</sup>.

Xu discloses a parametric contour model for use in image processing. Xu proposes an external force called gradient vector flow (GVF). The GVF fields are calculated by solving a pair of decoupled linear partial differential equations. Solving equations 11a and 11b of Xu may

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<sup>1</sup> To be thorough, further expedite prosecution, and for the sake of clarity, Applicants provide discussions of each of the references separately, however, Applicants are not attacking these references individually, but arguing that the references, even taken in combination, fail to render the claimed invention obvious because all the features of claim 1 are not found in the cited art.

provide a more accurate representation of the concave boundary regions in an image compared to traditional methods. However, Equations 11a and 11b require an excessive number of iterations due to the factor  $(f_x^2 + f_y^2)$ , which varies over the image. Consequently, Xu's method requires increased computation time and is an inefficient use of resources.

The Examiner cites section 3.2 of Xu to reject claims 2 and 3, which previously declared that the first and second linear combinations correspond to a filtering in the image plane with a 3 by 3 filter, wherein the 3 by 3 filter is a weighted combination of a Laplace filter and a unity filter. However, section 3.2 is merely a discussion of equations 10, 11a, 11b, 12a, and 12b, which require an excessive number of iterations to solve, as discussed above. Xu does not disclose or suggest the presence of a 3 by 3 filter. Moreover, Xu does not disclose or suggest a 3 by 3 filter that is a "weighted combination of a Laplace filter and a unity filter."

Oguz et al. disclose scene detection for coded video applications, which is rather the opposite of active contour modeling. Oguz fails to disclose the features mentioned above in the discussion of Xu with respect to previously recited claims 2 and 3. As such, Applicants have amended claim 1 to include features similar to those in now cancelled claims 2 and 3.

Claim 1 now requires that the "first linear combination corresponds to, in arbitrary order, a differentiation in one direction in the image plane and a filtering in the image plane with the inverse of a 3 by 3 filter, the filter corresponding to a filtering with a weighted combination of a Laplace filter and a unity filter...wherein the second linear combination corresponds to, in arbitrary order, a differentiation in another direction in the image plane and a filtering in the image plane with the inverse of a 3 by 3 filter, the filter corresponding to a filtering with a weighted combination of a Laplace filter and a unity filter." Applicants submit that Xu in view of Oguz does not disclose or suggest at least the use of the **inverse** of a 3 by 3 filter or that the filter is a "weighted combination of a Laplace filter and a unity filter," as discussed above.

Neither Xu nor Oguz, taken alone or in combination, disclose all of the elements required by claim 1, as discussed above. For at least the foregoing reasons claim 1 is patentable over Xu in view of Oguz. Claims 5 and 6 are patentable for at least reasons similar to those set forth above with respect to claim 1. Claims 4 and 7-8 are patentable at least by virtue of their dependency upon claims 1, 5, or 6.


**CONCLUSION**

In view of the above, Applicant earnestly solicits reconsideration and allowance of all of the pending claims.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,  
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